Advantages.

1. Four different powers can be used in rapid succession of half-second each, thereby making use of every fraction of time of perfect air. In this way I separated ω *Leonis* to perfection on 1895 February 28, during a fine night. But the 5 to 10 seconds of absolutely perfect vision could only be gained by this or a similar instrument, or in the ordinary way accidentally.

2. Eight to twelve powers are at disposal in sets of four each, with intervals of less than 10 seconds for each set.

3. The eyepieces are always in focus if one eyepiece is once set for colour of object.

4. The eye need not be removed from eyepiece during change of powers.

5. The revolver allows a sweep over the whole field of the object glass in any direction, a very considerable advantage, especially with higher powers. I usually set it by *e* to sweep in R.A., and then turn 90° and sweep in declination; very convenient when searching for an object of which ephemeris is not quite exact. In this way I found Brooke's Comet.

6. The very objectionable condensation is entirely obviated.

Disadvantage.—Perhaps slightly complicated, and extreme nicety in construction imperative.

I have the first eyepiece I made in use since 1895 January 16, and learned to value it more and more every starlight night. Professor Schiaparelli and Professor Max Wolf were very pleased with this instrument, especially the latter, who is himself no mean mechanic, who worked with it, and photographed it at Sidmouth in October 1896, and strongly recommended me to publish the above description of it.

Sidmouth Observatory:
March 25, 1898.

Times of Transit of the Zero Meridians of the two adopted Systems across the centre of the illuminated disc of Jupiter, 1897–98.

By A. C. D. Crommelin.

In compliance with numerous requests I have computed the following list of the times of transit of the zero meridians across the centre of the illuminated disc of *Jupiter*. Those passages are given which occur next after noon on those days for which the longitude of the central meridian at noon was given in my previous ephemerides. Thus five rotations intervene between the tabulated transits, except in the case of those marked with an asterisk, which are separated from those preceding them by four rotations only. Intermediate passages can be found either by interpolation, or, with sufficient accuracy for most purposes, by applying to the nearest transit in the tables once or twice the

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rotation period, which may be taken as 9ʰ 50ᵐ·5, 19ʰ 41ᵐ·0 for System I., and as 9ʰ 55ᵐ·5, 19ʰ 51ᵐ·0 for System II. :—

	System I. G.M.T.	System II. G.M.T.		System I. G.M.T.	System II. G.M.T.
	h m	h m		h m	h m
Dec. 10	5 47·8	6 3·4	Feb. 20	0 0·1*	5 26·2
12	7 0·5	7 42·0	22	1 12·2	7 4·0
14	8 13·1	9 20·6	24	2 24·4	8 42·0
16	9 25·7	1 3·3*	26	3 36·4	0 24·4*
18	0 47·8*	2 41·8	28	4 48·4	2 2·3
20	2 0·3	4 20·3	Mar. 2	6 0·5	3 40·3
22	3 12·9	5 58·8	4	7 12·5	5 18·2
24	4 25·5	7 37·1	6	8 24·6	6 56·0
26	5 38·0	9 15·6	8	9 36·5	8 34·1
28	6 50·5	0 58·3*	10	0 58·2*	0 16·3*
30	8 2·9	2 36·7	12	2 10·3	1 54·2
Jan. 1	9 15·3	4 15·0	14	3 22·3	3 32·2
3	0 37·4*	5 53·3	16	4 34·3	5 10·1
5	1 49·8	7 31·7	18	5 46·4	6 48·0
7	3 2·3	9 9·9	20	6 58·3	8 25·9
9	4 14·6	0 52·6*	22	8 10·6	0 8·2*
11	5 27·1	2 30·9	24	9 22·6	1 46·1
13	6 39·4	4 9·2	26	0 44·2*	3 24·1
15	7 51·8	5 47·3	28	1 56·2	5 2·1
17	9 3·9	7 25·6	30	3 8·3	6 40·0
19	0 26·0*	9 3·8	Apr. 1	4 20·3	8 18·0
21	1 38·2	0 46·4*	3	5 32·5	0 0·4*
23	2 50·5	2 24·5	5	6 44·6	1 38·5
25	4 2·8	4 2·6	7	7 56·8	3 16·4
27	5 15·0	5 40·8	9	9 8·9	4 54·5
29	6 27·2	7 18·8	11	0 30·8*	6 32·6
31	7 39·6	8 57·0	13	1 43·0	8 10·7
Feb. 2	8 51·7	0 39·5*	15	2 55·2	9 48·7
4	0 13·5*	2 17·6	17	4 7·5	1 31·3*
6	1 25·7	3 55·6	19	5 19·7	3 9·5
8	2 37·8	5 33·7	21	6 32·0	4 47·6
10	3 50·0	7 11·7	23	7 44·4	6 25·9
12	5 2·1	8 49·7	25	8 56·8	8 4·1
14	6 14·2	0 32·1*	27	0 18·7*	9 42·3
16	7 26·3	2 10·1	29	1 31·1	1 25·1*
18	8 38·5	3 48·1	May 1	2 43·6	3 3·4

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	System I. G.M.T. h m	System II. G.M.T. h m
May 3	3 56·0	4 41·8
5	5 8·4	6 20·1
7	6 20·9	7 58·6
9	7 33·5	9 37·0
11	8 46·1	1 19·6*
13	0 8·2*	2 58·1
15	1 20·8	4 36·6
17	2 33·4	6 15·1
19	3 46·1	7 53·8
21	4 58·7	9 32·3
23	6 11·4	1 15·1*
25	7 24·2	2 53·8
27	8 37·0	4 32·3
29	9 49·7	6 11·0
31	1 11·9*	7 49·7
June 2	2 24·7	9 28·5
4	3 37·6	1 11·5*
6	4 50·5	2 50·2
8	6 3·4	4 28·9
10	7 16·3	6 7·8
12	8 29·2	7 46·5
14	9 42·1	9 25·4
16	1 4·5*	1 8·5*
18	2 17·5	2 47·3
20	3 30·4	4 26·2
22	4 43·4	6 5·1
24	5 56·5	7 44·0
June 26	7 9·5	9 23·0
28	8 22·5	1 6·2*
30	9 35·6	2 45·1
July 2	0 58·1*	4 24·1
4	2 11·2	6 3·1
6	3 24·2	7 42·1
8	4 37·4	9 21·2
10	5 50·6	1 4·4*
12	7 3·7	2 43·4
14	8 16·7	4 22·4
16	9 29·9	6 1·6
18	0 52·6*	7 40·6
20	2 5·8	9 19·7
22	3 19·0	1 2·9*
24	4 32·1	2 42·1
26	5 45·2	4 21·1
28	6 58·4	6 0·3
30	8 11·8	7 39·4
Aug. 1	9 25·0	9 18·5
3	0 47·6*	1 1·8*
5	2 0·9	2 40·9
7	3 14·1	4 20·1
9	4 27·4	5 59·3
11	5 40·6	7 38·4
13	6 53·8	9 17·5
15	8 7·1	1 0·9*
17	9 20·4	2 40·1

7 Vanbrugh Park Road, Blackheath, S.E.:
1898 *April* 6.

Elongations of Jupiter's Fifth Satellite, 1898 *April* 10 *to June* 19.

By A. C. D. Crommelin.

The period adopted in the American Ephemeris, viz. 11^{h} 57^{m} 22^{s}·6865, has been employed. This is sensibly the same as the definitive value 11^{h} 57^{m} 22^{s}·6790 deduced by Dr. Cohn from all the observations made up to 1895 January 30, the difference only amounting to about 1 minute in 10 years. Every fourth elonga-